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ABSTRACT

The socialization process (defined as the transition from "naive newcomer" to "established incumbent") of women into both traditional and non-traditional academic disciplines was investigated. Graduate students (N=98 males and 46 females) completed questionnaires assessing work congruence, problem areas, personal feelings, physical health, life stresses, work involvement, perceptions of accomplishment, and expected units of credit and grades. Results indicated that: (1) few differences exist between male and female graduate students in terms of work and life experience; (2) interpersonal relations with other graduate students tended to decline in the early part of the academic year; and (3) although females initially "fit in" less well than males, this difference was reduced to non-significance by the end of the first semester. (Author/HLM)

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The Socialization of Women Graduate Students in Traditional and Non-Traditional Academic Disciplines

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The Socialization of Women Graduate Students

in

Traditional and Non-Traditional Academic Disciplines

It is obvious to anyone who has ventured into the research literature on women in management that a considerable amount of data have been collected, written-up, and published on this topic during the past few years. But, examination of this literature indicates a near total absence of data on the socialization process of women professionals in non-traditional career areas. The purpose of this study was to investigate, using a longitudinal design, the socialization of women graduate students into traditional and non-traditional academic disciplines.

The socialization process refers to the sequence of events and personal changes that begins at the time a new employee starts work in a new job and more or less ends when the new employee has developed into a contributing member of the organization. We say "more or less ends" because it is unlikely that socialization ever actually stops. Rather, the amount of change probably would lessen over time and stabilize. Socialization then refers to the transition from "naive newcomer" to "established incumbent."

In another paper (Terborg, 1977) events relevent to the socialization process were discussed. These factors were identified from research using primarily men as subjects and came from the work of Feldman (1976), Graen (1976), Hall (1971), Katz and Kahn (1966), Van Maanen (1975), and Wanous (1977).

The first major event in the socialization process, once the individual has accepted the job offer, seems to deal with the newcomer's encounter with the social and technological aspects of the job. Through initiation to co-workers and job duties, the newcomer learns what is expected and how to perform various tasks. Failure to develop social bonds that can cushion the impact of a new job may result in the experience of job problems and stress (Van Maanen & Schein, 1977). To the extent that only one or two women are included in the group of newly hired employees, or, that few women incumbents exist in the job, women may be treated as isolates and may have greater difficulty than men in their initial encounter with the job. This lack of congruence also may serve to inhibit later progress and development.

The second major event in the socialization process seems to deal with the management of various conflicting demands. These demands can come from the job itself, from the individual's personal life, and from interactions between job demands and personal life demands. Feldman (1976) suggests that these conflicts cannot be dealt with until the person has initially confronted the job and has learned with is expected. Failure to cope with competing demands may lead to dissatisfaction with various facets of the job and the individual's personal life. It also may inhibit work accomplishment and personal development. Women in male dominated jobs may encounter more difficulty than men because of problems with initiation to the job and because of increased conflict between personal demands and job demands. Research suggests that women can add the role of a career but they have difficulty shedding the role of housewife and mother (cf., Mathews, Collins, & Cobb, 1974; Hall & Gordon, 1973).

The final major event deals with the ability of the incumbent to experience job success and to become actively involved in the job. A person who has a sense of accomplishment, a record of job success, and a feeling of job

satisfaction may be said to have been effectively socialized from a naive newcomer to an established incumbent. If women in male-dominated career areas have greater problems than men in dealing with earlier events of the socialization process, then we might expect women to be less effectively socialized after a reasonable period of time.

The present study was designed to investigate some factors in the socialization process as a function of the sex of the newcomer and the percentage of males in the newcomer's group of co-workers. We were specifically interested in comparing the socialization of women with men and with examining the validity of the general socialization model.

METHOD

Overview

The study was conducted at the University of Illinois at Urbana-Champaign. All non-foreign first year graduate students in 17 departments were contacted by mail and asked to participate in a one year study of student reactions to graduate life. Students indicated participation by returning the first questionnaire. Three different questionnaires were mailed in September, November, and March of the 1977-78 academic year.

Although students and not employees were surveyed, it was believed that the role of a graduate student would provide an adequate context for the study of the socialization process. A full-time graduate student is in many ways employed in a new and demanding work setting. In addition, some departments such as Accounting and Bio-Chemistry have large proportions of male graduate students whereas other departments such as History and Educational Administration have more equal proportions of males and females.

Sample and Procedure

Enrollment figures were examined for the purpose of selecting departments

to be included in the study. The goal was to identify departments that had high, moderate, and low proportions of male graduate students and that had a sufficiently large number of newly admitted students. A total of 17 departments were included in the study. Data will be reported from 11 of those departments. Six departments were excluded from the present analyses because of small sample sizes. Table 1 shows the departments that were surveyed. These departments were classified into three groups for the

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Insert Table 1 about here

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purpose of analysis. Group One consists of departments with a high proportion of male graduate students and represents the general area of business. Group Two consists of departments that also have a high proportion of male graduate students, but this group is representative of the Hard Sciences. Group Three consists of departments that have roughly equal proportions of males and females and is representative of the Social Sciences.

In September of 1977, all non-foreign, first-year graduate students in the selected departments were sent a letter from the Dean of the Graduate College requesting their participation in the project. They also were sent the first of three questionnaires. Participation was voluntary. A total of 187 usable questionnaires were returned from the 335 that were mailed. This response rate of 56 percent was achieved with a follow-up letter and a phone call.

The second questionnaire was mailed in November of 1977 to all students who agreed to participate. The response rate was 81 percent. The third questionnaire was mailed in March of 1978 to all students who returned the second questionnaire. The response rate was 77 percent. This resulted in

a sample of 98 males and 46 females in 11 departments. The average age of the sample was 24.4 years and ranged from 19 years to 53 years. Slightly less than 1/3 of these students were married and approximately 4% were divorced.

Measures

Items were written to assess various aspects of the socialization process. Item groups were factor analyzed and scale scores were computed where appropriate. All scales had acceptable measures of internal consistency with Cronbach's alpha generally being in the .70's to .80's range.

The measures collected at each questionnaire administration are presented in Table 2. Work Congruence assessed the extent to which the person believed that they "fit in" with regard to the social and academic

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Insert Table 2 About Here

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aspects of their program. Problem Areas dealt with problems in program activities and with time demands. Personal Feelings and Physical Health measured the extent to which the person reported symptoms associated with life stress. Conflicts were assessed in the areas of personal life, work life, and personal life by work life interactions. Satisfaction was assessed for coursework, the graduate program in general, and graduate life in general. Work involvement assessed the extent to which degree-related work was a central part of the person's life interests. Perceptions of accomplishments were assessed with items indexing the extent to which the person believed they had made progress in the pursuit of their graduate degree. Self-report stress assessed the extent to which the person reported being under heavy work loads and stress.

Expected units of credit assessed the number of graduate credit units the person expected to have. Expected grades also were assessed. Finally, two items assessed the extent to which the person was certain about their career goals.

RESULTS

Overview

Given the amount of data that were collected it would be easy to present pages of results. This, however, would totally obfuscate the findings and make this paper of little value. We decided therefore to present summaries of our findings.

Correlational Results

First, we found generally stable relationships on variables that were measured over time. People who were high on the subscales assessing work congruence at Time 1 were also high on these subscales at Time 2, and so forth.

Second, variables that a priori would be suggestive of effective socialization were intercorrelated with each other and variables that would be suggestive of ineffective socialization were intercorrelated with each other. Specifically, perceptions of ability and self-confidence were positively correlated with (1) a sense of accomplishment (2) acceptance and support from faculty and other graduate students and (3) satisfaction with the graduate program and with aspects of graduate life. Ability and self-confidence was negatively correlated with the number of problems encountered. Experiencing problems with the graduate program was related to (1) time demands from several sources (2) poor inter-personal relationships and (3) a general dissatisfaction with graduate life. Problems stemming from time demands were positively related to interpersonal

difficulties, dissatisfaction with work and with the graduate program, not enough free time, and problems with social and work-related conflicts. Finally, self-reported stress was associated with pressures for time from work, social, and family concerns; with a general dissatisfaction with graduate life; and with feelings of depression, tenseness, panic, and helplessness.

Finally, there seemed to be a trend for a decrease in the number of significant correlations with any variable across time. That is, the number of significant correlations for each variable decreased from Time 1 to Time 2, and again from Time 2 to Time 3. We speculate that this may be suggestive of a change in importance of some variables over time. For example, problems may become less severe, students may have learned to "live with" the problems, or both.

Overall, there seemed to be evidence of support for the general socialization process.

Analysis of Variance

Data for each time period were analyzed using ANOVA and MANOVA in a 3 x 2 design. The factors of the design were (1) three different departmental groupings and (2) sex.

Insert Table 3 About Here

The results for Wave 1 are presented in Table 3. As shown by the table, there were few effects. Males reported better interpersonal relations than females in terms of feelings of acceptance, similarity of academic interests, and personality match. Graduate students in business oriented departments reported greater feelings associated with life stress than students in either the Hard Sciences or the Social Sciences. For

example, business students indicated greater depression, confusion, inadequacy, and both mental and physical exhaustion. There were no differences on problem areas and there were no interactions.

The results for Wave 2 are presented in Table 4. As with Wave 1,

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Insert Table 4 About Here

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there were very few statistically significant differences. Students in Business Departments and the Hard Sciences expected to receive higher grades than students in the Social Sciences, and males expected to receive higher grades than females. This latter result only approached significance. Finally, females in Business Departments reported less satisfaction with the personal, social, and academic aspects of graduate student life than any other student group. There were no effects on the variables of (a) Work Congruence (b) Problem Areas, and (c) Conflict Areas.

The results for Wave 3 are presented in Table 5. Again, the general finding appears to be one of few differences.

Insert Table 5 About Here

Students in Business Departments reported greater feelings of stress and emotional problems than students in the Hard Sciences or the Social Sciences. Students in the Social Sciences received more course credits for the Fall semester than students in Business or the Hard Sciences. Students in the Social Sciences, however, expected lower grades for the Spring semester than students in other areas. There were only two effects for sex and these approached significance. Females reported less course credit than males for both Fall and Spring semesters.

There were two significant univariate interactions. Although all students reported certainty about continuing in their present academic areas, females in the Hard Sciences and males in the Social Sciences reported the greatest certainty and females in the Social Sciences reported the least certainty. The second interaction indicated that on one dimension of involvement with work, females in Business Departments were the most involved and males in Business and females in Social Sciences were the least involved.

ANOVA: Repeated Measures

Univariate repeated measures ANOVA's were conducted on those variables that were assessed more than once. Of interest in these analyses would be evidence of changes over time, and evidence of departmental grouping and sex interactions with time.

The analyses revealed several time main effects and time interactions. Only a summary of these results will be presented here, however.

Interpersonal relations with other graduate students when measured along several dimensions (e.g., similarity of interests, personality match), tended to decline in the early part of the academic year. This is particularly evident for graduate students in Business and the Hard Sciences and less so for students in the Social Sciences. Feeling of acceptance by those with whom one interacts however, increased over the course of the year. Perceptions of ability and self-confidence increased from Time 1 to Time 2, but this was paralleled by an increase in problems regarding aspects of the graduate program, and time demands. Reported physical and emotional symptoms associated with stress were higher at Time 3 than at Time 1 with students in business reporting more stress

than the other student groups.

Expected grades were higher for Business students, for males, and for the Spring semester than they were for Social Science students, for females, and the Fall semester. Satisfaction in general was significantly greater at Time 3 than at Time 2 for females whereas males indicated a decline over the same time period. Females in Business became more satisfied than males in Business and both males and females in the Hard Sciences. Assessment of the fit between required ability for coursework and present ability decreased over time for males in all departments. The same trend was evident for females in Business and the Hard Sciences. Only females in the Social Sciences showed an increase in their ability "fit" assessments.

DISCUSSION

The most important overall result from this particular analysis of the data would be that few differences exist between male and female graduate students in terms of their work and life experiences. Recall from the introduction that it was predicted that females in male oriented departments would have greater difficulty than males in male oriented departments, and that few differences would exist between males and females in departments that had more equal sex compositions. It was expected that when females were in the minority they would have a more difficult time getting acclimated to their department. Thus, for these predictions to be supported there should have been evidence of sex by department grouping interactions. This was not the case.

The results seem to indicate that knowledge of department membership has some predictive utility. Students in Business departments seemed to be under more stress than other students, but they also expected to receive

higher grades. Caution must be used here, however, because upon inspection of sample characteristics we found that Business students were more likely to be older, married, with a family, and with outside employment than students in other areas. Thus, department grouping effects may be confounded with other factors. On the other hand, this finding indirectly supports the socialization model in that students with a family and outside employment would be expected to be under more stress due to their multiple role membership.

Main effects predicted from student sex suggested that although females initially "fit in" less well than males, by the end of the first semester this difference was reduced to non-significance. The repeated measures analysis showed that males decreased over time on interpersonal dimensions whereas females had little change. Evidence of changes in satisfaction with various aspects of graduate work experiences were found as a function of sex, department, and time. At the end of the first semester, females in Business departments were the least satisfied student group. But, by the end of the second semester, females in Business were more satisfied than males in Business. Inspection of the means indicated that females increased in satisfaction while males declined. It is also interesting to note that females in Business were the most involved in their graduate work.

The difference in expected grades for males and females was consistent with findings reported by Burton (1977) and Ott (in press). They found that males in engineering were more confident of academic achievement than females in engineering even though there were no objective grade differences.

In our study we found that males expected higher first semester grades than females. This result only approached significance, however, and there was no sex main effect for second semester grades. Males also reported more course credit than females, but this again only approached significance.

On one hand the results of this study could be interpreted as positive. Females in traditionally male oriented departments did not seem to have greater problems than any other student group. On the other hand, however, only self-report survey data were available for analysis. Data are currently being collected and will be collected on such things as drop out rate, research activity, time to degree and so forth. It may be that females in the minority take longer to get their degree and have higher attrition. Also, it is clear that the social context of a university may be different from the social context of employment. A female graduate student in Accounting, for example, may face different pressures once she has taken a job in an established company.

Overall, we believe that longitudinal research on the socialization of women professionals in male dominated careers is warranted. The work of Graen (1976), Feldman (1976) and Van Maanen (1975) suggests that early socialization experiences are important for later success. We hope to further analyze our data to test additional predictions in the hope of contributing knowledge to this important area. We also hope that we have stimulated some interest in this topic and that additional field research will be forthcoming.

TABLE 1

DEPARTMENTS INCLUDED IN THE STUDY

GROUP ONE	PERCENT MALE
BUSINESS ADMINISTRATION	82 %
ACCOUNTING	78 %
GROUP TWO	
CHEMISTRY	75 %
BIO-CHEMISTRY	71 %
BIOLOGY	91 %
ANIMAL SCIENCE	80 %
GROUP THREE	
EDUCATIONAL ADMINISTRATION	58 %
HISTORY	58 %
POLITICAL SCIENCE	50 %
PSYCHOLOGY	39 %
FOOD SCIENCE	43 %

TABLE 2

VARIABLES ASSESSED FOR THE THREE TIME PERIODS

	SEPTEMBER	NOVEMBER	MARCH
WORK CONGRUENCE			
ABILITY/SELF-CONFIDENCE	X	X	
INTERPERSONAL-POSITIVE	X	X	
INTERPERSONAL-NEGATIVE	X	X	
PROBLEM AREAS			
PROGRAM	X	X	
TIME DEMANDS	X	X	
PERSONAL FEELINGS	X		X
PHYSICAL HEALTH	X		X
CONFLICT AREAS			
PERSONAL LIFE		X	
WORK LIFE		X	
PERSON X WORK		X	
SATISFACTION			
COURSEWORK		X	X
PROGRAM		X	X
GRADUATE LIFE		X	X
WORK INVOLVEMENT			
SUB-SCALE 1			X
SUB-SCALE 2			X
SUB-SCALE 3			X
PERCEPTIONS OF ACCOMPLISHMENTS			X
SELF-REPORT STRESS			X
EXPECTED UNITS OF CREDIT			
FALL SEMESTER		X	
SPRING SEMESTER			X
EXPECTED GRADES			
FALL SEMESTER		X	
SPRING SEMESTER			X
CAREER GOALS I			X
CAREER GOALS II			X

TABLE 3

ANOVA RESULTS: WAVE I

	DEPARTMENT GROUP	SEX	INTERACTION
WORK CONGRUENCE			
ABILITY/SELF-CONFIDENCE	NS	NS	NS
INTERPERSONAL POSITIVE	NS	.01	NS
INTERPERSONAL NEGATIVE	NS	NS	NS
Manova	NS	.05	NS
PROBLEM AREAS			
PROGRAM	NS	NS	NS
TIME DEMANDS	NS	NS	NS
Manova	NS	NS	NS
PERSONAL FEELINGS	.01	NS	NS
PHYSICAL HEALTH	.01	NS	NS

TABLE 4

ANOVA RESULTS: WAVE II

	DEPARTMENT GROUP	SEX	INTERACTION
WORK CONGRUENCE			
ABILITY/SELF-CONFIDENCE	NS	NS	NS
INTERPERSONAL POSITIVE	NS	NS	NS
INTERPERSONAL NEGATIVE	NS	NS	NS
Manova	NS	NS	NS
PROBLEM AREAS			
PROGRAM	NS	NS	NS
TIME DEMANDS	NS	NS	NS
Manova	NS	NS	NS
CONFLICT AREAS			
PERSONAL LIFE	NS	NS	NS
WORK LIFE	NS	NS	NS
PERSON X WORK LIFE	NS	NS	NS
Manova	NS	NS	NS
SATISFACTION			
COURSEWORK	NS	NS	NS
PROGRAM	NS	NS	NS
GRADUATE LIFE	NS	NS	.05
Manova	NS	NS	NS
EXPECTED GRADES: FALL SEM.	.01	.07	NS

TABLE 5

ANOVA RESULTS: WAVE III

	DEPARTMENT GROUP	SEX	INTERACTION
STRESS			
SELF-REPORT STRESS	.01	NS	NS
PERSONAL FEELINGS	.01	NS	NS
PHYSICAL HEALTH	NS	NS	NS
Manova	.01	NS	NS
SATISFACTION			
COURSEWORK	NS	NS	NS
PROGRAM	NS	NS	NS
GRADUATE LIFE	NS	NS	NS
Manova	NS	NS	NS
WORK INVOLVEMENT			
SCALE I	NS	NS	NS
SCALE II	NS	NS	NS
SCALE III	NS	NS	.05
Manova	NS	NS	NS
CREDIT			
UNITS FALL SEM.	.07	.10	NS
UNITS SPRING SEM.	NS	.10	NS
EXPECTED GRADES: SPRING SEM.	.05	NS	NS
Manova	.05	NS	NS
PERCEIVED ACCOMPLISHMENTS	NS	NS	NS
CAREER GOALS I	NS	NS	NS
CAREER GOALS II	NS	NS	.05